



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST REGIONAL OFFICE

205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

Received

JAN 13 2009

IAN A. BOWLES
Secretary

ARLEEN O'DONNELL
Commissioner

Env. Remediation

Steve Morrow
Olin Corporation
P.O. Box 248
Lower River Road
Charleston, TN 37310

JAN 07 2009

RE: WILMINGTON – Solid Waste/COR
Olin Gypsum Landfill
51 Eames Street
Completion of Closure
FMF # 131605

Dear Mr. Morrow:

The Department of Environmental Protection, Northeast Regional office, Bureau of Waste Prevention, Solid Waste Management Section (MassDEP) has completed review of the documents for certification of the closure pursuant to the MassDEP Solid Waste Management Regulations, 310 CMR 19.000, of the Olin Gypsum Landfill, 51 Eames Street, Wilmington, Massachusetts (the "landfill"). The certification documents were prepared on your behalf by MACTEC Engineering and Consulting, Inc., Portland Maine, and include a plan of one (1) sheet, prepared by Dana F. Perkins, Inc., Tewksbury, Massachusetts, titled:

Existing Conditions
Plan of Land
Existing Landfill
Wilmington, Massachusetts
November 10, 2006

The certification documents demonstrate that a permanent landfill cap pursuant to the requirements established at 310 CMR 19.00, effective July 1, 1971, has been installed on the



landfill. The permanent cap consists of a seven (7) inch thick layer of topsoil overlaying a six (6) inch thick layer of low permeable soil.

The landfill closed to the receipt of waste circa 1986. The plans for closure of the landfill were approved by MassDEP December 1, 1986 with amendments approved June 6, 1988. Principal construction of the landfill closure occurred between February 1987 and September 1988. Improvements to the cap were constructed circa 2006. As the closure was approved and principally constructed prior to July 1, 1990, MassDEP evaluated the completion of the closure based on the standards of design and construction as established pursuant to the regulations as effective from July 1, 1971 through June 30, 1990 ("310 CMR 19.00").

Olin Corporation is conducting environmental monitoring of the site as part of the environmental assessment and monitoring of the Olin property required pursuant to M.G.L. 21E and the regulations promulgated there under, and/or 42 USC 9601-9675 (CERCLA).

Pursuant to 310 CMR 19.045, and the requirements of M.G.L. Chapter 111, § 150A, the Department hereby determines that the landfill has been capped in conformance with the landfill design plans as approved pursuant to 310 CMR 19.00 on December 1, 1986 and amended June 6, 1988, and the landfill is now, for purposes of applicability of the Solid Waste Management Regulations and M.G.L. Chapter 111, § 150A, deemed closed. This determination is subject to the following conditions:

1. This determination does not constitute an approval, authorization, determination or other action pursuant to the remediation of contaminants on the Olin Chemical site, Wilmington, Massachusetts, now pending or future, pursuant to M.G.L. 21E and the regulations promulgated there under, and/or 42 USC 9601-9675 (CERCLA) and the regulations promulgated there under. Olin Corporation, its successors, heirs and/or assigns, shall take such actions as may be determined necessary, or otherwise appropriate, by MassDEP pursuant to M.G.L. Chapter 21E and/or the United States Environmental Protection Agency (EPA) pursuant to CERCLA, or other law as applicable.
2. Should MassDEP determine pursuant to post closure monitoring of the site that conditions are occurring requiring further action to maintain compliance with M.G.L. Chapter 111, § 150A, and the regulations promulgated there under, or to otherwise protect the public health, safety and the environment, MassDEP reserves its rights to amend, modify, suspend or revoke this determination, or otherwise require assessment and/or remedial actions.
3. Olin Corporation shall record with the Registry of Deeds, or if the land is Registered Land, with the Registry Section of the Land Court for the District in which it lies, as applicable, a Record Notice of Landfill Operation conforming to the requirements as established at 310 CMR 19.141.
4. Olin Corporation shall conduct monitoring of the site as provided at facility monitoring plan, prepared by MACTEC Engineering and Consulting, Inc., Portland, Maine, titled:

Calcium Sulfate Landfill Post Closure Monitoring Plan
51 Eames Street
Wilmington, Massachusetts
December 2006

Provided, Olin Corporation may amend the monitoring plan as necessary to conform to requirements as stipulated by MassDEP pursuant to the MCP and/or the EPA pursuant to CERCLA. Wherein such modifications to the monitoring plan are necessary, Olin Corporation shall notify the MassDEP, Bureau of Waste Prevention, Solid Waste Management Section pursuant to the procedures established at 310 CMR 19.039(6).

NOTICE OF RIGHT TO APPEAL

Olin Corporation (Olin) is hereby notified that it may within twenty-one (21) days file a request that this decision be deemed a provisional decision under 310 CMR 19.037(4)(b), by submitting a written statement of the basis on which Olin believes it is aggrieved, together with any supporting materials. Upon timely filing of such a request, the decision shall be deemed a provisional decision with an effective date twenty-one (21) days after the Department's receipt of the request. Such a request shall reopen the administrative record, and the Department may rescind, supplement, modify, or reaffirm its decision. Failure by Olin to exercise the right provided in this section shall constitute a waiver of Olin's right to appeal.

Appeal. Any person aggrieved by the issuance of this decision, except as provided for under 310 CMR 19.037(4)(b), may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A, and M.G.L. c. 30A, not later than thirty (30) days following the receipt of the final decision. The standing of a person to file an appeal and the procedures for filing such appeal shall be governed by the provisions of M.G.L. c. 30A. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the decision by a court of competent jurisdiction, the decision shall remain effective.

Notice of Action. Any aggrieved person intending to appeal this decision to the Superior Court shall first provide notice to the Department of their intention to commence such action. Said notice of intention shall include the Department file number and shall identify with particularity the issues and reasons why it is believed the decision was not proper. Such notice shall be provided to the Office of General Counsel of the Department and the Regional Director for the regional office which processed the application. The appropriate addresses to which to send such notices are:

General Counsel
Department of Environmental Protection
One Winter Street - 3rd Floor
Boston, MA 02108

Regional Director
Department of Environmental Protection
205a Lowell Street
Wilmington, MA 01887

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, provided that a matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the environmental impact of the permitted activity.

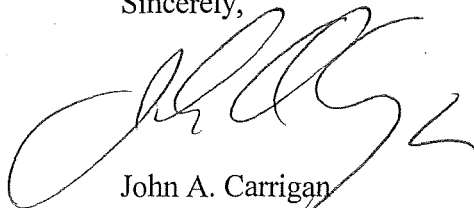
If you have any questions regarding this matter, please contact David Adams at 978-694-3295.

Sincerely,



David C. Adams
Environmental Engineer
Solid Waste Management

Sincerely,



John A. Carrigan
Section Chief
Solid Waste Management

JD/DCA/dca

Enclosure: Fact Sheet

cc:

Wilmington Board of Health
12 Glen Road
Wilmington, MA 01887

Peter Thompson
MACTEC Engineering and Consulting, Inc.
511 Congress Street
Portland, ME 04101

James DiLorenzo
USEPA
One Congress Street, Suite 1100 (HIO)
Boston, MA 02114-2023
dilorenzo.jim@epa.gov

Joseph Coyne
MassDEP/BWSC/Boston

Chris Pyott
MassDEP/BWSC/NERO

FACT SHEET
OLIN
Olin Gypsum Landfill Closure Certification

File Number: none
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Facility: Olin Gypsum Landfill
a/k/a Calcium Sulfate Landfill (CSL)
Address: 51 Eames Street
Wilmington, MA 01887

Owner/operator: Olin Corporation
Address: Lower River Road
P.O. Box 248
Charleston, TN 37310

DSWM ID Number: SL0342.004
Facility Number: 131605
Regulated Object Number: 313063
Permit Number: none
MassDEP/BWSC Release Tracking Number (RTN): 3-0471
USEPA ID Number: MA001403104

Location¹: 42° 31' 24" North Latitude 71° 9' 10" West Longitude
UTM 324,142 mE 4,709,916 mN Zone 19

Size of site: waste disposal area: 2.5 acres
total site: not available

MEPA: application does not trigger MEPA review thresholds.

Current Application:

Type: certification of landfill closure
Transmittal Number: none
date: February 1, 1988
amended: December 13, 2006

Engineer of record:

1988 submission: EC Jordan Co.
261 Commercial Street
P.O. Box 7050
Portland, ME 04112
Alvin K. Ahlers, Project Manager
James S. Atwell, PE

¹ For reference only. Estimated from MassGIS

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2006 amendments: MACTEC Engineering and Consulting, Inc.
511 Congress Street
Portland, ME 04101
Mark Peters, PE
Peter Thompson, Project Manager

Type of waste: Calcium sulfate (gypsum) from process water treatment

Other Actions Effecting this Application:

Landfill Closure
Conceptual Site Plan
October 13, 1986
application # : NESW-88-006
approved: December 1, 1986
amended approval: June 6, 1988

MassDEP Confirmed Disposal Site
Tier 1A Disposal Site
RTN 3-0471

United States Environmental Protection Agency (USEPA)
Comprehensive Environmental Response Compensation and Liability Act
("CERCLA")
National Oil and Hazardous Substances Pollution Contingency Plan ("NCP")
National Priorities List ("NPL")
Olin Chemical
ID # MA001403104

Submittals as part of this application:

report in letter form:
MACTEC Engineering and Consulting, Inc. to MassDEP
date: December 13, 2006
re: Closure Certification
Calcium Sulfate Landfill
51 Eames Street, Wilmington, MA

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plan:

Existing Conditions
Plan of Land
Existing Landfill
Wilmington, Massachusetts
November 10, 2006

prepared by:
Dana F. Perkins, Inc.
Tewksbury, Massachusetts

report:

Draft
Calcium Sulfate Landfill Post Closure Monitoring Plan
51 Eames Street
Wilmington, Massachusetts
December 2006

letter:

MACTEC to MassDEP
May 2, 2007
re: Additional Plans

plan:

Calcium Sulfate Landfill
51 Eames Street
Wilmington, Massachusetts
Approximate Landfill Limits
Plan and Section

prepared by:
MACTEC
05/01/07

Discussion:

The Olin Calcium Sulfate Landfill (the "CSL") has been identified as being located on a bedrock high resulting in ground water flow to the northeast towards an ephemeral drainage area which divides the Olin property site, and to the southwest where the ground water mixes with ground water flowing from the Woburn Landfill. Ground water studies conducted to differentiate the impact of leachate from the two abutting landfills on the

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ground water have identified that the leachate impacts of the CSL to be limited to the area of the CSL.

The CSL is a mono-fill type industrial waste landfill. The waste disposed of within the CSL is a sludge generated by the treatment of water at the Olin chemical plant located elsewhere on the site. The waste has been described² as consisting of an "essentially pure gypsum" (Calcium Sulfate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).

West of and adjacent to the CSL is an area identified on the existing conditions plan³ as "Bio-Pit". The "Bio-Pit" area was established as part of remediation activities at the Olin chemical plant, and is not a part of the CSL. The "Bio-Pit" was not included within the closure of the CSL, and is not subject to this application.

The cap placed on the CSL consists of six (6) inches of low permeability soil overlain by a layer of topsoil to support vegetation. Pursuant to the design standards at the time of construction of the cap, no drainage layer is provided between the impermeable soil and the topsoil.

The cap was constructed between the period of February 1987 and September 1988. Final certification of the cap construction was originally placed on hold in 1987 to allow Olin opportunity to consider impact of modification to the Solid Waste Management regulations (310 CMR 19.00) then under development. The final certification of the completion of the closure was further delayed as Olin reviewed the impact of other remediation activities occurring at the site pursuant to 310 CMR 40.0000⁴ and M.G.L. Chapter 21E. MassDEP has, therefore, reviewed this certification of completion of the closure of the landfill pursuant to the standards as were applicable during the period of construction of the cap (i.e. the standards as applicable prior to July 1, 1991).

Assessment of the Olin property site pursuant to the M.G.L. Chapter 21E and the MCP has determined the contaminants of concern at the Olin property to include the heavy metal Chromium (Cr), plus volatile and semi-volatile compounds including phthalates. In that the sludge was generated by treatment of the water supply to the chemical production activities of the Olin chemical plant, not treatment of waste water from the Olin chemical plant production activities, the volatile and semi-volatile compounds are not expected to occur in significant concentrations within the landfilled sludge. Analyses

² Geomega; "Olin Wilmington Technical Series, IV. Geochemical Discrimination Between Groundwater Emanating from the Calcium Sulfate and Woburn Sanitary Landfills"; February 10, 1999

³ Dana F. Perkins, Inc., Tewksbury, Massachusetts; "Existing Conditions, Plan of Land, Existing Landfill, Wilmington, Massachusetts"; November 10, 2006

⁴ The Massachusetts Contingency Plan, the "MCP".

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of ground water in the vicinity of the CSL have not detected the presence of Chromium at concentrations of concern.

Continuing remediation activities at the Olin property site are occurring pursuant to the regulations and policies of the U.S. Environmental Protection Agency (USEPA) pursuant to 42 USC 9601-9675 (CERCLA).

The low permeability soil has permeability of approximately 1×10^{-6} cm/sec. The topsoil has an organic content of between 2.8 and 5.3 percent⁵.

As originally constructed, and documented by E.C. Jordan Co., the topsoil layer varied significantly in thickness, with areas with as little as one (1) inch in thickness. Subsequently, Olin modified the topsoil layer by the addition of additional topsoil. Measurements of the topsoil layer by MacTec have identified the completed topsoil layer to be generally seven (7) inches in thickness, with one portion of the landfill thinning to a little over five (5) inches in thickness.

MassDEP, has determined the thickness of the topsoil layer now substantially complies with the specifications of the approved closure plans and is in substantial compliance with the standards of established at 310 CMR 19.15 as applicable at the time of construction of the cap.

⁵ As determined by loss on ignition.